

...MARCH 2011 REGIONAL CLIMATE SUMMARY...

SUMMARY FOR THE SAN FRANCISCO BAY AREA AND MONTEREY BAY AREA...

MARCH 2011 WAS A COOL...WET...AND STORMY MONTH. MARCH RAIN TOTALS WERE AS MUCH AS TWICE THE 30 YEAR MONTHLY AVERAGE. STRONG STORMS DURING THE SECOND HALF OF THE MONTH PRODUCED FLOODING...MUDSLIDES... WIND DAMAGE...HAIL...AND EVEN A TORNADO AS WELL AS A COUPLE OF WATERSPOUTS.

THE WEATHER PATTERN WAS ACTIVE FOR MOST OF THE MONTH. DOWNTOWN SAN FRANCISCO HAD MEASURABLE RAINFALL ON 21 MARCH DAYS. STORM SYSTEMS MOVED THROUGH THE AREA WITH REGULARITY DURING THE FIRST HALF OF THE MONTH...BUT STORMS PRIOR TO THE 18TH WERE GENERALLY WEAK TO MODERATE IN INTENSITY. TEMPERATURES DURING THE FIRST HALF OF THE MONTH WERE NEAR SEASONAL AVERAGES...FLUCTUATING A BIT ABOVE AND BELOW NORMAL.

A PERSISTENT UPPER TROUGH NEAR THE WEST COAST DEEPENED BY THE END OF THE THIRD WEEK OF MARCH. THIS RESULTED IN MORE VIGOROUS AND COLDER STORM SYSTEMS AFFECTING THE AREA. A SERIES OF STRONG COLD FRONTS SWEEPED THROUGH THE AREA FROM THE 18TH THROUGH THE 24TH. PERIODS OF HEAVY RAIN TRIGGERED NUMEROUS MUDSLIDES AND GUSTY WINDS DOWNED TREES AND LED TO POWER OUTAGES. STORMS ON FRIDAY AND SATURDAY MARCH 18 AND 19 PRODUCED ISOLATED WIND GUSTS UP TO 60 MPH AND PERIODS OF HEAVY RAIN. A TORNADO BRIEFLY TOUCHED DOWN IN SANTA ROSA ON THE MORNING OF THE 18TH. LATER THAT MORNING A WATERSPOUT WAS FILMED OFF THE COAST OF OCEAN BEACH IN SAN FRANCISCO. ANOTHER WATERSPOUT WAS PHOTOGRAPHED OFF THE BIG SUR COAST EARLY THE MORNING OF THE 23RD. A DETAILED SUMMARY OF THE TORNADO AND WATERSPOUTS CAN BE FOUND AT THE FOLLOWING URL:

http://www.wrh.noaa.gov/mtr/stormSummary/Torwx_3_18-23_2011/torwx_3_18-23.php

THE STORM THAT BATTERED THE AREA ON THURSDAY MARCH 24 WAS THE STRONGEST OF THE MONTH...AND OF THE ENTIRE 2010-11 WINTER SEASON. WIDESPREAD WIND GUSTS OF BETWEEN 50 AND 60 MPH WERE REPORTED ACROSS THE REGION. HEAVY RAIN ON SATURATED SOILS CAUSED RAPID RISES ON AREA RIVERS. A FEW OF THE SMALLER RIVERS REACHED FLOOD STAGE THAT AFTERNOON AND EVENING INCLUDING THE PESCADERO CREEK IN SAN MATEO COUNTY...THE SAN LORENZO RIVER IN SANTA CRUZ COUNTY...AND THE BIG SUR RIVER IN MONTEREY COUNTY. IN ADDITION...BOTH THE SOQUEL CREEK AND CORRALITOS CREEK IN SANTA CRUZ COUNTY CAME VERY CLOSE TO FLOOD STAGE...AS DID THE CORTE MADERA CREEK IN MARIN COUNTY. IN MOST CASES...FLOODING WAS MINOR AS WATER LEVELS ONLY JUST REACHED BANKFULL BEFORE RECEDING. HOWEVER...WIDESPREAD FLOOD DAMAGE OCCURRED IN THE VILLAGE OF CAPITOLA ON THE 24TH WHEN THE SURGING NOBLE GULCH CREEK OVERWHELMED A RUPTURED DRAIN PIPE AND SENT WATER FLOWING THROUGH THE STREETS. MORE HEAVY RAIN TWO DAYS LATER...ON SATURDAY THE 26TH...SENT FLOOD WATERS INTO THE STREETS OF CAPITOLA ONCE AGAIN.

WHILE THE LARGER MAINSTEM RIVERS ALL EXPERIENCED SIGNIFICANT RISES LATE IN THE MONTH...ALL REMAINED WELL WITHIN THEIR BANKS. THE SALINAS RIVER AT SPRECKELS CRESTED AT A BIT OVER 20 FEET ON THE AFTERNOON OF

SATURDAY MARCH 26. WHILE THIS LEVEL WAS NEARLY THREE FEET BELOW FLOOD STAGE...IT REPRESENTED THE HIGHEST LEVEL ON THE LOWER SALINAS RIVER SINCE FEBRUARY OF 1998...WHICH WAS A STRONG EL NINO YEAR.

AT THE END OF FEBRUARY...YEAR-TO-DATE RAINFALL TOTALS RANGED FROM 85 TO 115 PERCENT OF NORMAL ACROSS THE REGION. AFTER A WET MARCH... SEASONAL RAIN TOTALS CLIMBED MUCH HIGHER. BY MARCH 31ST...YEAR-TO-DATE TOTALS HAD CLIMBED TO 100 PERCENT OF NORMAL IN SAN JOSE...TO 125 PERCENT OF NORMAL IN SAN FRANCISCO...OAKLAND AND SALINAS...AND 130 PERCENT OF NORMAL IN SANTA ROSA.

THE STORMS DURING THE SECOND HALF OF THE MONTH WERE COLD ENOUGH TO PRODUCE SEVERAL SNOW EVENTS ON AREA MOUNTAIN PEAKS. NEARLY ONE FOOT OF SNOW FELL ATOP MOUNT HAMILTON IN SANTA CLARA COUNTY FROM THE 18TH THROUGH THE 26TH...MAKING MARCH 2011 THE 6TH SNOWIEST MARCH ON RECORD AT THE CLIMATE STATION AT LICK OBSERVATORY. THE COLD STORMS ALSO RESULTED IN BELOW NORMAL AVERAGE HIGH TEMPERATURES FOR THE MONTH ...GENERALLY ABOUT 4 DEGREES BELOW NORMAL. AVERAGE LOW TEMPERATURES FOR THE MONTH WERE CLOSE TO NORMAL IN MOST LOCATIONS AS SIGNIFICANT CLOUD COVER HELPED HOLD TEMPERATURES UP AT NIGHT...OFFSETTING THE COLD AIRMASS IN PLACE FOR MUCH OF THE MONTH.

TEMPERATURES FOR THE MONTH AS A WHOLE WOULD HAVE ENDED UP EVEN FARTHER BELOW NORMAL HAD IT NOT BEEN FOR THE DRAMATIC WARM-UP THAT OCCURRED DURING THE FINAL TWO DAYS OF THE MONTH. STRONG HIGH PRESSURE AND OFFSHORE FLOW SENT TEMPERATURES SHARPLY HIGHER ON WEDNESDAY THE 30TH...AND HIGHER STILL ON THE 31ST. FIFTEEN DAILY TEMPERATURE RECORDS WERE EITHER BROKEN OR TIED ON THE FINAL TWO DAYS OF MARCH.

...MARCH REGIONAL TEMPERATURE SUMMARY...

LOCATION	DEPARTURE			DEPARTURE		
	AVG HIGH	NORMAL HIGH	FROM NORMAL	AVG LOW	NORMAL LOW	FROM NORMAL
NORTH BAY...						
ANGWIN	54.4	58.8	-4.4	39.2	39.9	-0.7
CLOVERDALE	62.5	65.2	-2.7	42.4	42.9	-0.5
KENTFIELD	60.0	65.2	-5.2	44.5	43.9	0.6
NAPA	62.4	66.0	-3.6	44.2	43.0	1.2
PETALUMA	60.3	64.5	-4.2	43.0	42.2	0.8
SAINT HELENA	61.5	65.0	-3.5	43.9	41.6	2.3
SAN RAFAEL	58.9	64.6	-5.7	45.3	45.2	0.1
SANTA ROSA	61.9	64.4	-2.5	40.8	42.9	-2.1

SAN FRANCISCO PENINSULA...

HALF MOON BAY	59.7	59.8	-0.1	44.5	44.6	-0.1
PACIFICA	56.5	61.0	-4.5	46.5	46.4	0.1
REDWOOD CITY	62.6	65.2	-2.6	45.2	44.3	0.9

SAN FRANCISCO						
AIRPORT	59.9	61.4	-1.5	47.5	46.8	0.7
SAN FRANCISCO						
DOWNTOWN	59.8	62.0	-2.2	49.0	49.2	-0.2

EAST BAY...

CONCORD	63.1	67.5	-4.4	46.9	46.6	0.3
FREMONT	62.0	66.1	-4.1	46.6	46.2	0.4
LIVERMORE	62.5	65.6	-3.1	44.0	42.3	1.7
MARTINEZ	61.3	65.9	-4.6	M	42.0	M
MOUNT DIABLO						
JUNCTION	52.7	59.0	-6.3	40.2	40.6	-0.4
NEWARK	61.3	63.7	-2.4	46.8	47.3	-0.5
OAKLAND	62.5	63.3	-0.8	48.0	49.1	-1.1

SOUTH BAY AND SANTA CRUZ COUNTY...

BEN LOMOND	62.1	66.2	-4.1	41.2	40.6	0.6
GILROY	64.2	67.0	-2.8	M	43.3	M
MOUNT HAMILTON	46.4	50.4	-4.0	35.0	37.0	-2.0
SAN JOSE	62.9	65.9	-3.0	46.2	46.5	-0.3
SANTA CRUZ	64.0	64.3	-0.3	44.5	43.2	1.3
WATSONVILLE	62.1	63.6	-1.5	44.3	43.6	0.7

MONTEREY AND SAN BENITO COUNTIES...

CARMEL VALLEY	63.8	64.9	-1.1	41.7	40.4	1.3
HOLLISTER	63.5	65.5	-2.0	43.8	42.3	1.5
KING CITY	66.0	68.5	-2.5	42.5	40.9	1.6
MONTEREY	60.1	62.1	-2.0	45.8	45.6	0.2

...MARCH REGIONAL PRECIPITATION SUMMARY...

LOCATION	MAR TOTAL	AVERAGE MAR PRECIP	PERCENT OF NORMAL
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NORTH BAY...

ANGWIN	13.00	6.21	209
CALISTOGA	12.65	5.89	215
CLOVERDALE	14.01	6.31	222
KENTFIELD	14.31	7.05	203
MUIR WOODS	11.13	5.60	199
NAPA	8.95	4.09	219
PETALUMA	9.88	3.91	253
SAINT HELENA	12.81	5.57	230
SAN RAFAEL	10.92	4.63	236
SANTA ROSA	10.44	4.74	220
SONOMA	8.60	4.65	185

SAN FRANCISCO PENINSULA...

HALF MOON BAY	6.02	4.36	138
PACIFICA	6.92	4.39	158
REDWOOD CITY	5.43	3.30	165
SAN FRANCISCO			
AIRPORT	5.70	3.26	175
SAN FRANCISCO			
DOWNTOWN	7.02	3.25	216
WOODSIDE	9.02	4.80	188

EAST BAY...

CONCORD	5.69	2.06	276
FREMONT	3.27	1.96	167
LIVERMORE	4.10	2.44	168
MARTINEZ	6.99	3.24	216
MOUNT DIABLO			
JUNCTION	7.96	3.95	202
NEWARK	4.06	2.39	170
OAKLAND	7.69	3.56	216

SOUTH BAY AND SANTA CRUZ COUNTY...

BEN LOMOND	15.02	7.50	200
GILROY	6.53	3.70	176
LOS GATOS	6.66	3.93	169
MOUNT HAMILTON	8.14	3.90	209
SAN JOSE	4.32	2.59	167
SANTA CRUZ	10.87	4.78	227
WATSONVILLE	7.88	3.92	201

MONTEREY AND SAN BENITO COUNTIES...

BIS SUR STATION	12.21	7.30	167
CARMEL VALLEY	4.68	2.68	175
HOLLISTER	3.03	2.44	124
KING CITY	4.03	2.49	162
MONTEREY	6.83	3.53	193

...DAILY TEMPERATURE RECORDS FOR MARCH 2010...

DATE	LOCATION	RECORD MAXIMUM TEMP	PREVIOUS RECORD
3/30	SANTA ROSA	85	82 IN 2001
3/30	SAN RAFAEL	82	81 IN 1968
3/30	NAPA	86	82 IN 2001
3/30	SAN FRANCISCO DOWNTOWN	82	81 IN 1987

3/30	OAKLAND MUSEUM	83	79 IN 2003
3/30	MOFFETT NAS	79	78 IN 2003
3/31	KENTFIELD	81	80 IN 2001
3/31	RICHMOND	83	77 IN 1981
3/31	MOFFETT NAS	83	82 IN 2000
3/31	NAPA	87	86 IN 1966
3/31	OAKLAND MUSEUM	83	80 IN 2000
3/31	SAN FRANCISCO AIRPORT	80	76 IN 2000
3/31	SANTA ROSA	86	83 IN 2000
3/31	SAN FRANCISCO DOWNTOWN	82	82 IN 2000
3/31	SALINAS	84	84 IN 1987

...MONTHLY RANKS FOR DOWNTOWN SAN FRANCISCO...

AVERAGE HIGH TEMPERATURE.....59.8.....52ND COOLEST OUT OF 136 YEARS
 AVERAGE LOW TEMPERATURE.....49.0.....51ST WARMEST OUT OF 136 YEARS
 PRECIPITATION.....7.02 INCHES.....12TH WETTEST OUT OF 161 YEARS

...MONTHLY EXTREMES FOR SELECT LOCATIONS...

LOCATION	WARMEST DAY(S)	COOLEST DAY(S)	WETTEST DAY(S)
SANTA ROSA	3/31 86 DEG	3/01 32 DEG	3/24 1.38 IN
SAN FRANCISCO	3/30 3/31 82 DEG	3/01 43 DEG	3/24 1.24 IN
SAN JOSE	3/31 81 DEG	3/01 37 DEG	3/24 0.93 IN
SALINAS AP	3/31 83 DEG	3/01 35 DEG	3/20 0.97 IN

NOTE: THIS CLIMATOLOGICAL DATA IS PRELIMINARY. FOR OFFICIAL
 CERTIFIED CLIMATOLOGICAL DATA PLEASE CONTACT THE NATIONAL

CLIMATIC DATA CENTER AT 828-271-4800 OR <http://www.ncdc.noaa.gov>.
OFFICIAL VALUES AS DETERMINED AT THE ABOVE WEB SITE MAY TAKE
SEVERAL MONTHS FOR AUTHENTICATION AND PUBLICATION.

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